STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

SOUTHERN INDIANA GAS AND ELECTRIC COMPANY d/b/a VECTREN ENERGY DELIVERY OF INDIANA, INC. (VECTREN SOUTH – ELECTRIC)	**)))))**	**CAUSE NO. 43839**

DIRECT TESTIMONY

OF

ERIC M. HAND - PUBLIC'S EXHIBIT NO. 6

ON BEHALF OF

THE INDIANA OFFICE OF UTILITY CONSUMER COUNSELOR

June 25, 2010

TESTIMONY OF WITNESS ERIC MARK HAND
CAUSE NO. 43839
VECTREN SOUTH ELECTRIC

I. Introduction

Q: Please state your name and business address.

A: My name is Eric Mark Hand, and my business address is 115 W. Washington Street, Suite 1500 South, Indianapolis, IN, 46204.

Q: By whom are you employed and in what capacity?

A: I am employed as a Utility Analyst in the Electric Division for the Indiana Office of Utility Consumer Counselor ("OUCC").

Q: Would you summarize your educational background?

A: I graduated from Rose-Hulman Institute of Technology with a Bachelor of Science degree in Mathematical Economics. I received a Masters in Business Administration from Indiana University with majors in Management, Marketing, and International Business. I have completed numerous additional training and development courses, including all three Emerald Ash Borer training modules offered to the public by Purdue University in conjunction with the Indiana Department of Natural Resources.

Q: Please describe your professional experience.

A: I was a Manufacturing Engineer for 5 years with a steel components company followed by a 30-year automotive industry career with administrative positions in

Manufacturing, Engineering, and Contracts, then management positions in Finance, Contracts and Information Technology.

Q: What is the purpose of your testimony?

A: My testimony provides information, documentation and recommendations regarding both Petitioner's proposed Emerald Ash Borer (EAB) Expense Adjustment and proposed modifications to their General Terms and Conditions.

Q: What have you done in preparing your testimony for this proceeding?

A: I read testimony submitted in this rate case and attended most of the March 8-12, 2010 initial hearings conducted in this proceeding. I prepared several data requests, reviewed responses and reviewed hearing transcripts. I have read published articles and letters to OUCC regarding Vectren South Electric and this rate case. I've reviewed Vectren's website as well as information on other websites. I've discussed the EAB issue with experts and have discussed various aspects of the case with other OUCC analysts.

II. Emerald Ash Borer Expense Adjustment

Q: What is Petitioner proposing regarding EAB?

A: Witness Schach's Exhibit EJS-3 proposes a Total Annual Incremental Expense of $667,590 ($3.3M total over 5 years) to fund an aggressive initiative Vectren claims is necessary "[b]ecause dead ash trees will pose a significant threat to system reliability." Schach Direct at p.14, lines 23-24.

Q: How did Petitioner estimate its proposed annual EAB adjustment?

A: Attachment EMH-1 (Petitioner's Exhibit No. EJS-3) assumes that all (15,600) ash trees in proximity to Petitioner's distribution lines would be removed within a 5-year period. Petitioner's response to OUCC DR 5 Q-14 (Attachment EMH-2) states "The main incremental expense relates to the need to actually remove the species due to infestation, rather than engage in normal trimming activities."

Q: Do you have any concerns with Petitioner's EAB cost estimation methodology?

A: Yes. Both the estimated number of ash trees to be removed and the estimated removal cost per tree are overstated.

Q: Please explain your concerns regarding Petitioner's estimated number of ash trees to be removed.

A: Petitioner's response to OUCC DR 15 Q-4 (Attachment EMH-3) provided a table with the calculations supporting the 15,600 estimated ash trees to be removed. The table itemized 17 circuits including total trees, circuit length (in miles) and the average number of trees per mile for each circuit. Vectren apparently averaged the 17 circuits' average trees per mile to arrive at a 64.05 overall average (and then apparently rounded up to 65). In this case, averaging averages distorts the data because it does not recognize the respective weight of each data element. To achieve a more representative weighted average, I divided the sum of the total trees by the sum of the total miles which yields 53.14 trees per mile. Petitioner overstates the probable number of trees per mile by 22% and, at a minimum, the estimate should be reduced accordingly.

Q: Please explain your concerns regarding Petitioner's "removal cost per tree" estimate.

A: Vectren South's $3.3M request assumes they will remove 15,600 ash trees with diameters between 20 – 30"even though less than 2% of the ash trees Petitioner is likely to remove are that size. Petitioner's request assumes removal costs of $280 per tree while their internal documents put the actual removal costs for the vast majority of these trees at $7 each. This overstates the actual removal costs by up to a factor of 40 times.

Attachment EMH-4 is Petitioner's response to OUCC DR2, Q-14 which, along with two supporting documents, explains how the EAB adjustment was calculated. Vectren South's proposal requests an additional $210 per tree to account for the difference between their $280, 4-hour removal process (Drop Removal Accessible Reduced or "DRAR") and their $70, one-hour tree trim time. The first attachment explains that the DRAR removal code means the trees will dropped, but the firewood, logs & brush will be left in place.[1] The removal code then adds a single letter modifier (-U, -A, -B, -C, -D) to describe the size of the trees involved.[2] Removal code "-C" applies to trees between 20-29.99" in diameter. According to the second attachment, Vectren South assumes four

[1] See Attachment EMH-4, "Vectren Energy Delivery Electric Distribution Measurement Units 10-27-03," Section 2.01 A(b)2 – Removal Types for code "DR"; Section 2.01 A(b)3 for code "A"; Section 2.01 A(b)4 for code "R".

[2] Id. at Section 2.01 A(b)5

manhours for a Code DRAR-C tree removal.[3] Vectren South's one hour average tree trim time is shown on the same document.

Attachment EMH-5 is taken from the March 2010 Indiana Department of Natural Resources (IDNR) Forest Inventory Analysis (FIA). This portion of the FIA includes a data sort of Indiana's ash tree inventory, by diameter class (1"-2.9", 3"-4.9", etc) for the seven counties in which Vectren South serves. While the analysis demonstrates that only about 1.3% of the ash trees in that area are 21" or larger in diameter ([71,683+48,087+23,404+25,089+57,138]/17.9M = 1.26%), this is the diameter Vectren South uses to estimate its $280 costs for each of the estimated 16,500 ash trees to be removed.

In contrast, 80.3% of the ash trees in the Vectren service territory counties ([10.54M + 3.88M] / 17.9 M = 80.3%) are less than 5" in diameter. Vectren South's internal unit cost for removing trees less than 6" in diameter (Code DRAR-U) is only 0.1 man-hours, or about $7 per tree,[4] ten times less than Petitioner's unit cost to trim. Once the trees are removed, they would not require future trimming, saving Petitioner an estimated $219,000/year.[5]

[3] See Attachment EMH-4, untitled document referred to as "Productivity Report (Hours to Perform Work) 2010", Tree Removal Unit DRAR-C (highlighting by Petitioner).
[4] See "Electric Distribution Measurement Units" page 4, Section 2.01 A(b)5, Code "-U"; see also "Productivity Report" Tree Removal Unit DRAR-U.
[5] 6% (ash trees) * $3,656,326 ("Total Contract Dollars for Line Clearance for Period July 2008-June 2009") per Petitioner's Response to OUCC DR 5 Q-9.

Q: Do you agree with Mr. Schach's testimony on page 12 that EAB will increase risks to utility lines and potentially reduce reliability?

A. No. If Petitioner is following appropriate vegetation management practices, EAB should not cause substantial additional risk. Attachment EMH-6 demonstrates that there have been few reported EAB cases near Petitioner's service territory. Assuming for purposes of argument, that every ash tree in Petitioner's service territory is already afflicted with mature EABs damaging trees, consistent and appropriate trimming practices will be sufficient to address any infestation. If Petitioner is trimming trees on a 5-year cycle and trims appropriately to prevent vertical encroachment from below and horizontal encroachment from the sides, trimmed trees should not grow back to a state where they are likely to damage utility lines for 5 years.

The EAB tunnels in the growth layer just under the bark and around the base of the tree, reducing the flow of water and nutrients to the upper branches and treetop. This retards tree growth and can ultimately kill the tree after three to four years of heavy infestation.[6] Slower than normal (or zero) horizontal or vertical growth means there is <u>less</u> risk the ash will negatively impact utility lines during a normal tree trimming cycle. Despite leaf loss at the top (as water and nutrients cannot be delivered), the roots continue to survive and the trunk remains structurally intact, unlike trees killed by diseases or insects that become hollowed out or rotted. As the ash loses its leaves, it is less susceptible to wind. If Vectren

[6] U.S. Dept. of Agriculture Forest Service, Northeastern Area State and Private Forestry, Pest Alert Circular #NA-PR-02-04, Revised September 2008.

South carries out regular appropriate vegetation management, ash trees dying or already dead from EAB do not pose a sudden or substantially elevated risk.

Q: Are there other reasons to reject Petitioner's proposed EAB adjustment?

A: Yes. This expense is not fixed, known or measurable. As Mr. Schach admitted under cross examination, Vectren South has incurred no actual additional costs related to EAB. While Mr. Schach's testimony claims that Petitioner is required to cut down and remove ash trees, his cross-examination responses regarding this issue were filled with qualifiers and substantially less absolute.[7]

Q: What is your recommendation regarding Petitioner's proposed annual EAB adjustment?

A: I recommend the Commission deny this proposed adjustment.

III. Petitioner's Proposed General Terms and Conditions

Q: What is the purpose of your testimony regarding the Petitioner's Proposed General Terms and Conditions Applicable to Electric Service?

A: My testimony provides information and recommendations regarding the Petitioner's proposed changes[8] to its current terms and conditions. Witness

[7] "Well, our plan would be to put it on a five-year program, and if the trees needed to be removed, if they're dying or dead within the strike zone, we'll certainly remove them. It will be sort of on a case by case basis working with landowners. If, in fact, a tree is only going through the process of dying, we might work with landowners and not remove the tree until it's deemed to be a hazard by us at which point we would remove the tree. So, it will be a combination of full removal or trimming and then eventual removal when the tree dies." Tr. at E-111

[8] See witness Albertson's Exhibit SEA-2, redlined Sheet No. 80, pages 1-11 ("I.U.R.C. No. E-13 General Terms and Conditions Applicable to Electric Service").

Albertson's Exhibit SEA-3, Sheet No. 80, pages 1-11 is a copy of Petitioner's current Terms and Condition, redlined to reflect Vectren South's proposed changes. My citations to the Terms and Conditions are to this document.

Q: Do you believe Petitioner's proposed changes are appropriate and necessary?

A: No. Petitioner offers little justification or rationale, and less empirical evidence supporting the proposed changes. Most of the new Terms and Conditions appear designed exclusively to benefit Vectren South at their customers' expense.

Q: What are some examples of Petitioner's proposed changes that are unreasonable and adverse to customers?

A: There are several. I will highlight some below:

Section 1 – Application of Rates (Sheet No. 80, pages 1-2) – Section 1(a)1 proposes allowing Vectren to maintain their "Rate Schedules, rules and regulations" only on their website and at the Commission. Customers without internet access would be significantly impacted. Vectren South will incur nominal, if any cost in making these documents available to all customers for review at its offices.

Section 1(a)(7) is a new Term that would give Vectren South the power to cut off service to the premises where a former customer with arrearages from a different location now resides. This new Term raises a host of issues. Most immediate is the idea that Vectren South would now have the authority to terminate electric service to customers who are current on their payments and have no history of non-payment based on a co-tenent's outstanding debt. Current

customers might have no knowledge of this debt, so imposing on the rights of innocent 3rd parties seems problematic. This rule could create serious issues with landlord / tenant relations or in multi-generational homes. Vectren South offered neither a quantification of the alleged losses nor any demonstration as to why current collection processes are inadequate. Mr. Albertson's responses in questions from the bench on this topic demonstrate that how to apply and enforce this provision is still unsettled at best. T.R. at I-54 through I-61.

Section 1(c)1 – Vectren South proposes to eliminate its current obligation to help customers determine which rate will provide service at the lowest annual cost. The Term continues to include language appropriately pointing out that the ultimate choice is the customer's and that there is no guarantee that a particular rate schedule will be the lowest. Given the increasing complexity of rate offerings and calculation formulas, this proposed change virtually guarantees increased costs to customers as a whole. This is "customer service" at its worst.

Section 6 – Customer's Wiring and Electrical Equipment (Sheet No. 80, page 4) – According to witness Albertson, new Section 6(b) would require " emergency generating units be equipped with suitable switches [which are] critical for the safety of those who operate, maintain and repair the Company's system." Albertson Direct at 19, lines 21-27. The proposed change reasonably addresses this issue, but also contains the following language in the first sentence, "No other source of electric light or power supply shall be used by the Customer on the same installation in connection with the Company's supply." I discussed

this with Mr. Albertson and expressed OUCC's concerns that this language could be read as discouraging or preventing alternative source (solar, wind, electric vehicle, etc.) generation or net metering. Mr. Albertson emphatically stated this was not the Company's intent and that Petitioner would consider changes to this first sentence.

Section 7 – Access to Customer's Premises (Sheet No. 80, page 4) – Proposes to change "denial of access" to "failure to provide access" as the standard regarding when an Additional Charge for disconnection can be assessed. "Denial" might reasonably be interpreted as an act of commission while the more broad "failure to provide access" allows more frequent punitive customer penalties / fees based on potentially non-deliberate acts.

Section 8 – Deposit Required (Sheet No. 80, page 4-5) – the proposed changes add a new set of non-residential customer deposit rules. Deposits will be required more frequently, in greater amounts, with longer utility holding periods paying reduced interest rates compared to residential customers.[9] Vectren South offers no evidence that these charges are necessary to recover additional costs of serving these customers or that the utility is suffering any negative consequences by the absence of this change.

[9]See 170 IAC 4-1-15 and Petitioner's current tariff.

Q: What do you recommend?

A: I recommend that Petitioner's existing "I.U.R.C. No. E-12 General Terms and Conditions Applicable to Electric Service" be retained and the proposed changes rejected.

Q: Does this conclude your direct testimony?

A: Yes

Electric & Distribution Vegetation Management Program
Vectren South
EAB Anticipated Incremental Expenses

4,000 Miles Electric Transmission & Distribution Lines * 65 Trees/Mile	**260,000 Trees**
(65 Trees/Mile based on 2009 Tree Count Info)	
6% Total Tree Population are Ash * 260,000 Trees	**15,600 Ash Trees**
(Indiana Department of Natural Resources state average ash tree population 6 - 10%)	
Vectren South Anticipates 2% Increase on Vegetation Related Calls 2,933 Orders * 2%	**59 Additional Orders**
(2,933 Calls Based on 2008 Vegetation Related Trouble Calls)	
Anticipated Incremental Expenses (5 Year Time Frame) 15,600 Ash Trees * $210/Tree	**$3,276,000**
($210/Tree based on 3 additional hours labor to 'make safe' and/or remove tree)	
Annual Incremental Expenses for Scheduled Maintenance Work $3,276,000 / 5 Years	**$655,200**
Annual Incremental Expenses for Un-Scheduled Maintenance Work 59 Orders * $210/Order	**$12,390**
($210/Order based on 3hrs per Order on a Time & Equipment Rate)	
Total Annual Incremental Expenses	**$667,590**

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Attachment EMH-1
Page 1 of 2
Petitioner's Exhibit No. EJS-3
Vectren South-Electric
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Annual Incremental Costs Associated with EAB			
# of Miles of Electric Lines both Transmission & Distribution	4,000	Miles	
Number of Trees Per Mile (Based on 2009 Tree Count Info)	65	Trees/Mile	
Calculation	260,000	Total Trees	
Percentage of Ash Trees against total Population of Trees	6%		
Calculation	15,600	Ash Trees	
Incremental increase to 'make safe' and/or remove versus trim Ash trees adjacent to electric facilities (3 hours labor and equipment at $70/hr)	$210	Per tree	
Calculation	$3,276,000		
The number of years required to complete 1 cycle of trimming	5	years	
Calculation	$655,200	Additional Scheduled Maintenance Expenses	
The number of Vegetation Related Trouble Calls for 2008 is	2,933	Orders	
The anticipated % increase in vegetation related trouble calls based upon an expected increase of one order per week is	2%		
Calculation	59		
The average cost per trouble order is (assuming 3hrs per order)	$210	Per Order	
Calculation	$12,390	Additional UnScheduled Maintenance Expenses	
Total Incremental Expenses Associated with EAB Annually	**$667,590**		

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Petitioner's Exhibit No. EJS-3
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DR 5 Q-14. Referring to Page 14, please state the estimated cost comparison for removal & disposal of an ash tree, as compared to a different variety of tree of similar size in Vectren South's service territory. In providing your response, please produce copies of any bills, invoices, or estimates to support your contention; including the date such documents were produced.

Witness: **Eric J. Schach**

Response: **The main incremental expense relates to the need to actually remove the species due to infestation, rather than engage in normal trimming activities. However, because EABs are 100% fatal to ash trees, merely trimming an ash tree will not suffice. Vectren South will be forced to remove any infected ash trees and there will be special disposal requirements. The pertinent cost estimates are set forth in EJS-3. Also see previous Data Request No. 2, Q-14 for more detail related to the estimated removal cost difference.**

DR 15 Q-4. In reference to Exhibit EJS-3, page 1-2, please provide a copy of the "2009 Tree Count Info" which was used to determine the factor of 65 Trees/Mile.

Response: **The following 17 circuit sample of "Tree Count Information" was utilized to provide the estimate of 65 Trees/Mile used to prepare Exhibit EJS-3:**

Circuit Name	Total Trees	# of Miles	Avg # of Trees Per Mile
Circuit # 1	632	5	126.40
Circuit # 2	3720	75.8	49.08
Circuit # 3	754	11.4	66.14
Circuit # 4	1666	47.7	34.93
Circuit # 5	1000	11	90.91
Circuit # 6	3018	36	83.83
Circuit # 7	850	20	42.50
Circuit # 8	3781	61	61.98
Circuit # 9	1644	20	82.20
Circuit # 10	1240	42.5	29.18
Circuit # 11	531	14	37.93
Circuit # 12	2618	48	54.54
Circuit # 13	1560	59	26.44
Circuit # 14	1256	8.8	142.73
Circuit # 15	214	6.5	32.92
Circuit # 16	957	13.2	72.50
Circuit # 17	2163	39.6	54.62
Average # of Trees Per Mile			**64.05**

DR 2 Q-14. With regard to Exhibit EJS-3, please provide supporting documentation for the estimates that three (3) additional labor hours will be required to deal with each ash tree make safe/removal and each additional unscheduled work order.

Response: **Please see attached documents titled DR2 Q-14.**

The attached two documents "*Electric Distribution Measurement Units 10-27-03*" and "*Productivity Report (Hours to Perform Work) 2010*" were used to determine the man hours necessary to remove/make safe affected ash trees. Normally, Vectren South-Electric would only trim the ash tree during normal circuit work. This is referred to as a Trim Accessible (TA), which has 1 man hour associated to this type of work. Now, because of the Emerald Ash Borer, Vectren South-Electric has to remove or make the tree safe from contacting our facilities. This is referred to as a Drop Removal Accessible Reduced (DRAR), which has 4 man hours associated with it. To determine the incremental costs for ash tree removal, we subtracted the TA time from the DRAR, or 3 additional man hours for the removal/make safe of an ash tree.

The first document *Electric Distribution Measurement Units 10-27-03* gives definitions for the various circumstances that could be involved with tree trimming. The second document *Productivity Report (Hours to Perform Work) 2010* shows the number of man hours associated with each work type. These documents were created by a certified Arborist who has 30 + years of utility tree trimming experience.

Vectren South-Electric
Cause No. 43839
Response to OUCC Data Request #2

Attachment
DR2 Q-14

VECTREN ENERGY DELIVERY
ELECTRIC DISTRIBUTION MEASUREMENT UNITS
10-27-03

1. TRIMMING UNIT DESCRIPTIONS

1.01 Trimming is divided into the following units:

A. Trim Individual Tree

TA = *T*rim, *A*ccessible (Always accessible to bucket truck)

TI = *T*rim, *I*naccessible (Not always accessible to bucket truck)

This unit reflects a solitary tree or groups of somewhat separated trees requiring trimming where the tree count is easily determined and the tree(s) are trimmed more or less on an individual setup basis. This unit may include any of the following types of tree trimming:

1. Side
2. Under
3. Through
4. V
5. Topping

Upon completion of this work unit, the accessibility code should be changed, if needed, to reflect what actually occurred.

B. *T*rim *W*ooded Area (TW)

This unit reflects a more or less continuous area of trees and brush where an actual tree count is somewhat difficult to determine and where multiple trees can be trimmed with a single setup. This unit requires trimming on both sides of the electric line as well as underneath the line. This unit may include all the types of tree trimming as noted in the Trim Individual Tree unit as well as any brush trimming that may be required. This unit is stated in linear feet which is measured by pacing.

C. Side Trim Wooded Area
SWA = ***S***ide trim ***W***ooded Area, ***A***ccessible (Always accessible to bucket truck)

SWI = ***S***ide trim ***W***ooded Area, ***I***naccessible (Not always accessible to bucket truck)

This unit reflects a more or less continuous area of trees and brush where an actual tree count is somewhat difficult to determine and where multiple trees can be trimmed with a single setup. This unit may include side trimming, under trimming, topping and brush trimming on one side of the electric line and if required, underneath the electric line. This unit is also utilized in areas where trimming is required on both sides but not underneath the electric line. In these cases, each side shall be measured and indicated as such. This unit is stated in linear feet which is measured by pacing.

Upon completion of this work unit, the accessibility code should be changed, if needed, to reflect what actually occurred.

D. ***T***rim ***B***rush (TB)
This unit reflects the trimming of all woody brush. Brush is considered any woody vegetation that is less than six (6) inches ***D***iameter at ***B***reast ***H***eight (DBH). This unit is stated in linear feet which is measured by pacing.

E. ***T***rim ***S***econdary Only (TS)
This unit reflects the trimming of secondary lines only. It is utilized whenever secondary needs trimming and no trimming is required on primary distribution or transmission lines. This unit is stated in linear feet which is measured by pacing.

2. REMOVAL UNIT DESCRIPTIONS

2.01 Removals are divided into the following units:

A. Tree Removal

a. This unit may reflect an individual tree removal or the removal of a multiple trunk tree where each trunk is considered an individual tree.

b. Tree Removal Code

1. This unit is described by the following code:

First Two Letters = Removal Type
Third Letter = Accessibility
Fourth Letter = Crown Size
Hyphen (-)
Tree Count
Tree Size

Example: TRAR – 3C
***T**otal **R**emoval, **A**ccessible, **R**educed Crown size, three C-Size Trees*

2. Removal Types

TR = ***T**otal **R**emoval* (Remove Everything)
Contractor shall haul off and dispose of all the wood and debris.

MR = ***M**odified Debris Disposal **R**emoval* (Leave Firewood and/or Logs & Remove Brush)
Contractor shall follow the specific wood and debris disposal instructions as indicated on the permission slip.

DR = ***D**rop **R**emoval* (Leave Firewood, Logs & Brush with minimal aerial removal of branches)
Contractor shall follow the specific wood and debris disposal instructions as indicated on the permission slip.

3. Accessibility
   A = ***A***ccessible (Always Accessible To Bucket Truck)
   I = ***I***naccessible (Not Always Accessible To Bucket Truck)

   Upon completion of the work unit, the accessibility code should be changed, if needed, to reflect what actually occurred.

4. Crown Size
   F = ***F***ull Size
   R = ***R***educed Size

5. Tree Size
   U = Undersized individual tree less than 6 inches DBH where brush classification would be inappropriate, i.e. the tree is located by itself and not in the proximity to any other brush.
   A = 6 Inches - 11.99 Inches DBH
   B = 12 Inches - 19.99 Inches DBH
   C = 20 Inches – 29.99 Inches DBH
   D = 30 Inches +

   1) Tree size is determined by the measurement of the trunk at DBH (**D**iameter at **B**reast **H**eight) or if not appropriate, at a position on the tree trunk that most accurately represents the actual tree size.

   2) If a tree branches below DBH;
      A. Determine the average branch diameter.
      B. Measure the trunk at the smallest diameter below all branches.
      C. The tree size (diameter) is then determined by averaging the trunk diameter with the average branch diameter.

   3) If the tree consist of multiple trunks close to the ground, each trunk should be considered an individual tree and measured accordingly.

B. ***R***emove ***B***rush (RB)
   a. This unit reflects the removal of all woody brush within a specified area. Brush is considered any woody vegetation that is less than 6 inches in DBH. This unit is stated in square feet measured by pacing.

b. Brush removal shall be performed on properties that meet all of the following criteria:
   1. The property is not suitable for herbicide spraying due to any of the following conditions:
      1) The property owner will not allow herbicide spraying.
      2) The brush would impede the movement of a large truck within the easement due to its location, size and density, i.e. a large truck could not drive through it.
      3) The dead brush would create an excessively unsightly condition in a landscaped area.
      4) Proximity to a herbicide sensitive area.

   2. Mowing is not feasible.

   3. The average brush size is at least 2 inches in diameter at stump height or other tree work is being performed nearby and the brush is large enough that cutting and treating the stump with a herbicide would be effective.

c. If specific debris disposal instructions are not included, the Contractor shall haul off and dispose of all wood and debris.

C. *R*emove *V*ine (RV)
   a. This unit reflects the cutting and if possible, removal of a vine, clump of vines, cluster or mass of vines that are on the Owner's pole, downguy, wires or other facility.

   b. The Contractor shall haul off and dispose of all the resultant debris.

   c. The vine shall be treated with a herbicide.

   d. Property owner notification is not required for the removal of vines except for ornamental type vines that are located in a landscaped area.

3. MOWING UNIT DESCRIPTION (MOW)

3.01 This unit reflects mowing an area with an industrial type mowing machine.

3.02 Any Removal Units within the designated mowing area are considered part of the mowing unit and are not individually accounted for.

3.03 This unit is stated in square feet measured by pacing.

CIRCUIT NAME _____ **Week Ending** _____
CONTRACTOR _____
FOREMAN _____

TREE REMOVAL UNIT	# UNITS	NEW PROJ. MH PER UNIT	NEW PROJ. MH
TRAF-U		0.1	0
TRAF-A		1.15	0
TRAF-B		6.5	0
TRAF-C		20	0
TRAF-D		35	0
TRAR-U		0.1	0
TRAR-A		0.7	0
TRAR-B		4.5	0
TRAR-C		12	0
TRAR-D		14	0
TRIF-U		0.1	0
TRIF-A		1.4	0
TRIF-B		10.25	0
TRIF-C		30	0
TRIF-D		47.5	0
TRIR-U		0.1	0
TRIR-A		0.825	0
TRIR-B		5.75	0
TRIR-C		17	0
TRIR-D		19	0
		TOTAL	

TREE REMOVAL UNIT	# UNITS	NEW PROJ. MH PER UNIT	NEW PROJ. MH
MRAF-U		0.1	0
MRAF-A		0.9	0
MRAF-B		5	0
MRAF-C		13.5	0
MRAF-D		20	0
MRAR-U		0.1	0
MRAR-A		0.48	0
MRAR-B		3.5	0
MRAR-C		7	0
MRAR-D		9	0
MRIF-U		0.1	0
MRIF-A		1.15	0
MRIF-B		7.5	0
MRIF-C		19.75	0
MRIF-D		30	0
MRIR-U		0.1	0
MRIR-A		0.53	0
MRIR-B		4.75	0
MRIR-C		9.5	0
MRIR-D		11.5	0
		TOTAL	

TREE REMOVAL UNIT	# UNITS	NEW PROJ. MH PER UNIT	NEW PROJ. MH
DRAF-U		0.1	
DRAF-A		0.4	0
DRAF-B		2	
DRAF-C		4	0
DRAF-D		6	
DRAR-U		0.1	
DRAR-A		0.4	
DRAR-B		2	
DRAR-C		4	
DRAR-D		6	
DRIF-U		0.1	
DRIF-A		0.4	0
DRIF-B		2	0
DRIF-C		4	0
DRIF-D		6	0
DRIR-U		0.1	
DRIR-A		0.4	
DRIR-B		2	
DRIR-C		4	
DRIR-D		6	
		TOTAL	

OTHER REMOVAL UNIT		NEW PROJ. MH PER UNIT	NEW PROJ. MH
RB		0.004	0
RV		0.1	0
		TOTAL	

TRIM UNIT	# UNITS	NEW PROJ. MH PER UNIT	NEW PROJ. MH
TA		1	0
TI		2	0
SWA		0.025	0
SWI		0.05	0
TW		0.1	0
TB		0.02	0
TS		0.02	0
		TOTAL	

GRAND TOTAL NEW PROJECTED MH = 0

TOTAL ACTUAL MH =

From: Gallion, Joey
Sent: Friday, March 19, 2010 9:09 AM
To: Hand, Eric
Cc: Louks, Pam
Subject: RE: Forestry/EAB Qustions

Hi Eric,

This would be an estimate of all forestland as defined by FIA which basically is all wooded lands that is at least an acre in size and 120' minimum width. This would not include urban areas. Obviously estimates along wooded edges or roads where typically your lines might be located could differ from these "true woods" estimates, as ash could be more abundant near edges than in the middle of woods, etc., but this is probably the best data you are going to find. As we discussed at IHLA, really it is probably more of a soils/site factor than anything. At any rate…below I've ran a query of FIA's database for just ash trees in the counties you requested for an estimated number of trees by diameter class.

I hope this information is helpful and what you needed. I'll be on vacation next week but if you need something else please let me know. I cannot answer your questions about urban areas. Perhaps our urban forester, Pam Louks (I've cc'd her with this email) could help you out a bit if any of the municipalities down there have street tree inventories. And FYI, I'm located in Jackson county.

Joey Gallion

Forest Resource Information

1278 E State Road 250

Brownstown, IN 47220

phone 812.358.2160 fax 812.358.5837

jgallion@dnr.IN.gov www.IN.gov/forestry

Estimate:

	Diameter class: current 2 inch class to 40															
County code and name	**Total**	**1.0-2.9**	**3.0-4.9**	**5.0-6.9**	**7.0-8.9**	**9.0-10.9**	**11.0-12.9**	**13.0-14.9**	**15.0-16.9**	**17.0-18.9**	**19.0-20.9**	**21.0-22.9**	**23.0-24.9**	**25.0-26.9**	**27.0-28.9**	**29.0-30.9**
Total	17,948,271	10,540,049	3,881,089	927,087	624,108	426,512	301,479	258,959	490,757	182,457	90,372	71,683	48,087	23,404	25,089	57,138
18037 IN Dubois	1,171,211	651,305	-	30,870	67,720	30,870	97,612	60,761	121,522	73,701	36,850	-	-	-	-	-
18051 IN Gibson	2,614,874	2,201,564	-	70,695	51,671	103,284	70,695	-	65,294	16,324	-	-	-	-	-	35,347
18125 IN Pike	1,278,698	476,046	282,025	121,622	38,216	38,216	50,985	38,216	114,557	25,447	22,640	22,640	48,087	-	-	-
18129 IN Posey	817,242	583,977	-	121,013	21,791	21,791	-	-	-	21,791	-	-	-	-	25,089	21,791
18147 IN Spencer	5,927,096	4,159,526	1,092,360	194,865	103,461	56,653	56,653	80,057	136,711	23,404	-	-	-	23,404	-	-
18163 IN Vanderburgh	700,464	271,444	-	120,734	166,618	-	-	49,043	21,791	21,791	-	49,043	-	-	-	-
18173 IN Warrick	5,438,686	2,196,186	2,506,703	267,288	174,631	175,698	25,534	30,882	30,882	-	30,882	-	-	-	-	-

Sent: Tuesday, March 16, 2010 2:34 PM
To: Gallion, Joey
Subject: Forestry/EAB Qustions

Hi Joey,

First, I want to belatedly thank you for the information you provided during our Emerald Ash Borer discussion on 1/27/10 at the Indiana Hardwood Lumbermen's Conference in Indianapolis. As a reminder, I was inquiring about EAB in general and specifically about any potential adverse impacts on utility line maintenance. I am analyzing a request from an electric utility for a rate increase for alleged increased line clearance costs due potential EAB. I believe you indicated that you have participated in Forest Inventory Analysis (FIA) for Indiana, so I have a couple follow-up questions for you regarding ash trees in southwest Indiana (Posey, Vanderburgh, Gibson, Warrick, Pike, Dubois, & Spencer counties).

1. I have seen some references which indicate that in general, ash trees make up approximately 6% of the total tree population of Indiana but urban areas are often a larger percentage and rural areas a lower percentage. What would be appropriate %'s to use for southwest Indiana (Posey, Vanderburgh, Gibson, Warrick, Pike, Dubois, & Spencer counties)?

2. What would be the estimated ash tree size % distribution based on trunk diameter ranges as follows:

a. Under 6 inches
b. 6-12 inches
c. 12-20 inches
d. 20-30 inches
e. more than 30 inches

For example, are there typically a much larger number of saplings than there are large trees or is there a fairly equal number of all sizes?

3. I believe you said you are located in Brownstown, Indiana but is that the Brownstown in Jackson County or the Brownstown in Crawford County?

Thanks in advance for your reply.

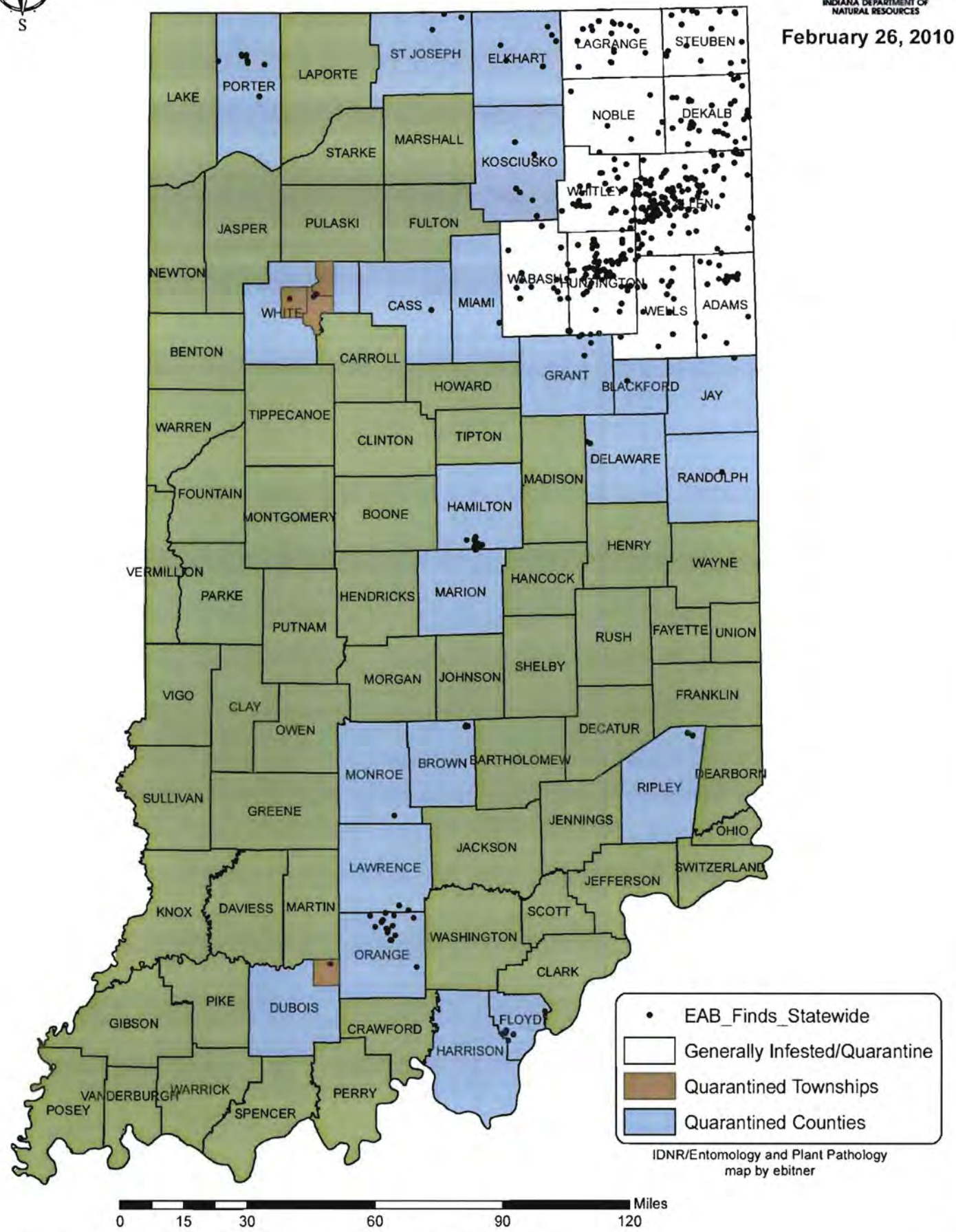
Eric M. Hand
Sr. Utility Analyst
(317) 453-2204
ehand@oucc.in.gov
Indiana Office of Utility Consumer Counselor
115 W. Washington St, Ste 1500 S
Indianapolis, IN 46204-3420

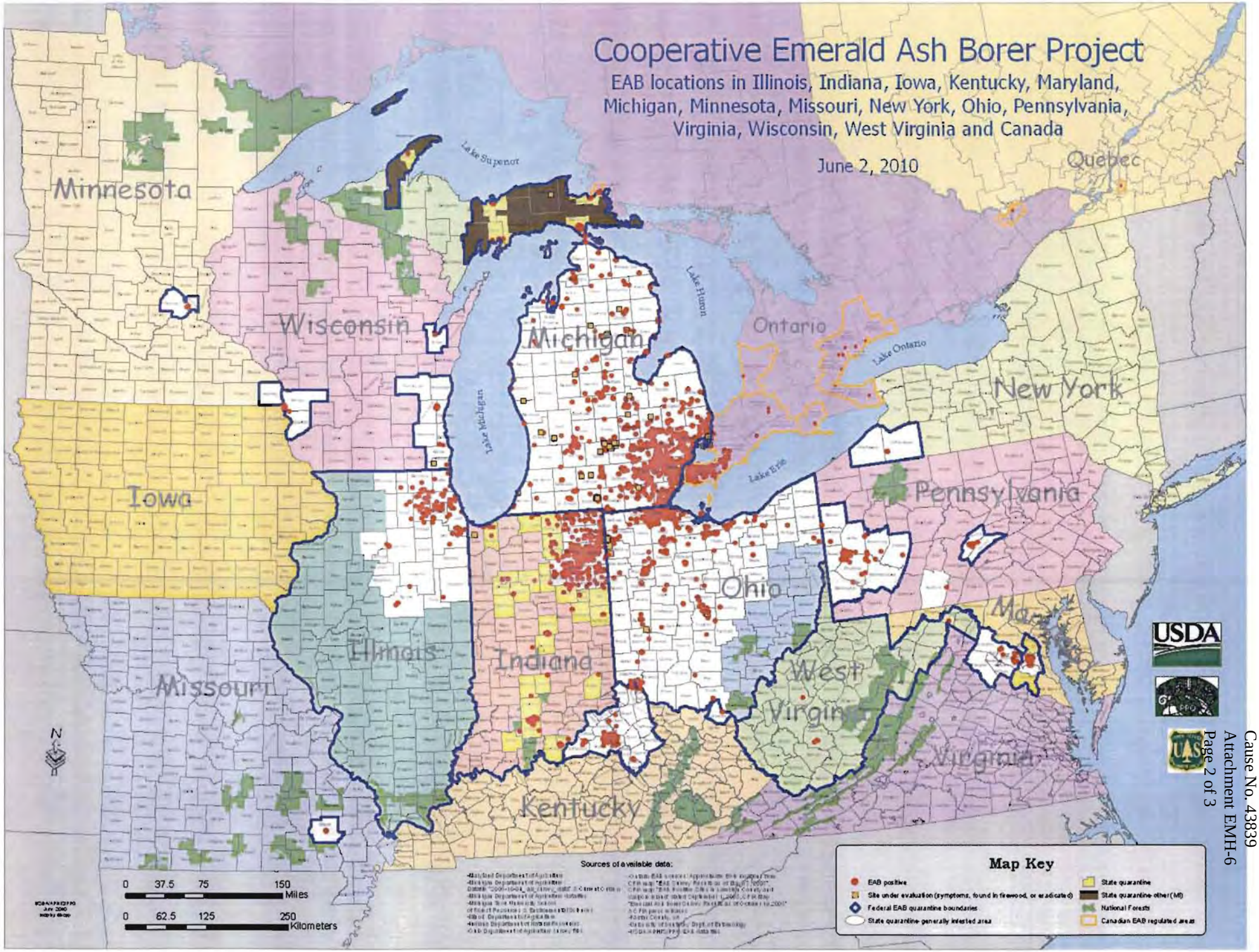
Cause No. 43839
Attachment EMH-6
Page 1 of 3

Indiana EAB Quarantine

INDIANA DEPARTMENT OF NATURAL RESOURCES

February 26, 2010




Cooperative Emerald Ash Borer Project
EAB locations in Illinois, Indiana, Iowa, Kentucky, Maryland, Michigan, Minnesota, Missouri, New York, Ohio, Pennsylvania, Virginia, Wisconsin, West Virginia and Canada
June 2, 2010
Minnesota
Wisconsin
Michigan
Iowa
Illinois
Missouri
Indiana
Ohio
Kentucky
West Virginia
Virginia
Pennsylvania
New York
Ontario
Quebec
Lake Superior
Lake Huron
Lake Michigan
Lake Erie
Lake Ontario
0 37.5 75 150 Miles
0 62.5 125 250 Kilometers
Sources of available data:
Map Key
EAB positive
Site under evaluation (symptoms, found in firewood, or eradicated)
Federal EAB quarantine boundaries
State quarantine-generally infested area
State quarantine
State quarantine-other(MI)
National Forests
Canadian EAB regulated area
USDA

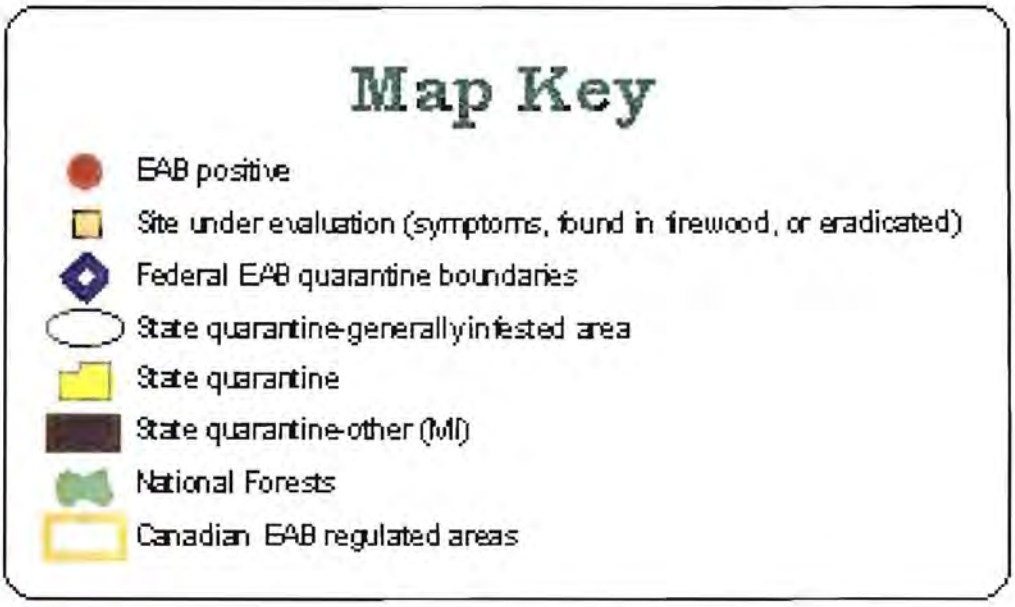
Cause # 43839

Reference: Petitioner's Exhibit No. EJS-1, pages 11-14

General Topic: Emerald Ash Borer (EAB)

General Sources:

Purdue University	www.purdue.edu	search "EAB"
Indiana Dept of Natural Resources	www.in.gov/idnr	search "EAB"
U.S. Dept. of Agriculture	www.aphis.usda.gov	search "EAB"
EAB - U.S. & Canada	www.emeraldashborer.info	
EAB Map Source: Purdue & IDNR	www.entm.purdue.edu/EAB	



AFFIRMATION

I affirm, under the penalties for perjury, that the foregoing representations are true.

Eric M Hand

By: Eric M. Hand
Indiana Office of
Utility Consumer Counselor

June 25, 2010
Date

Cause No. 43839